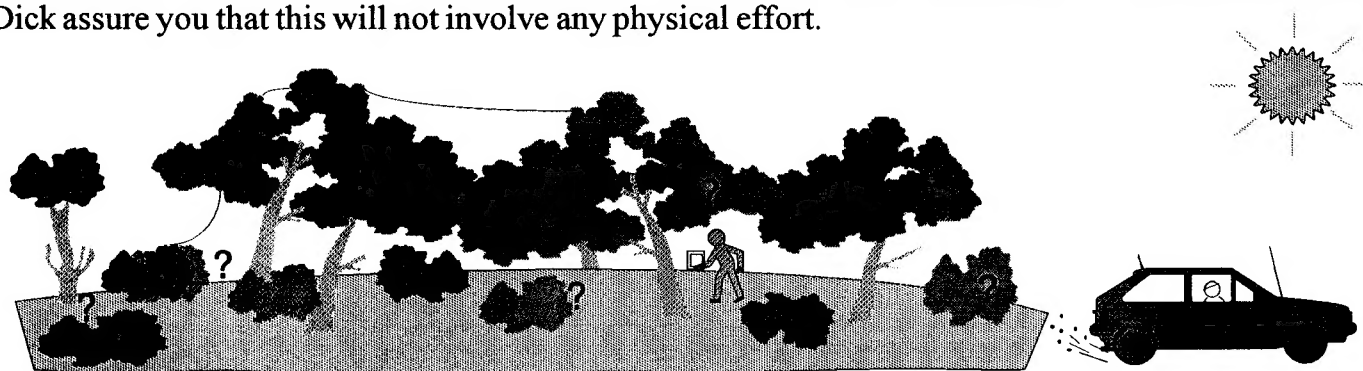




MAY MEETING "Direction Finding Techniques"

Since the development of portable or mobile radio equipment, the ability to locate the position of a radio transmitter has been of great benefit to us all. Excluding military uses, direction finding has long been used for radio navigation, and new applications are still being developed - such as the Tracker system for the recovery of stolen property.

Amateurs have applied DF to sport through the organisation of Local and National DF contests. The RSGB National DF Trophy was first awarded in 1951 and first claimed by a Chelmsford competitor in 1953. It now records 44 winners, of which 14 entries are for Chelmsford members, and it is currently held by a Chelmsford member - Dick Brocks. At our next Marconi College meeting at 7.30pm on Tuesday 2nd May, Andrew Mead and Dick Brocks will be explaining some of the equipment and techniques used to compete successfully in National and Local events. There will also be an opportunity for members to participate in a DF event, although Andrew and Dick assure you that this will not involve any physical effort.



DATES FOR YOUR DIARY

- 2 May CLUB MEETING - DF Techniques - G3WHR & G4KQE.
- 14 May DUNSTABLE DOWNS ARC - Car Boot Sale.
- 21 May WATERS & STANTON OPEN DAY - Hockley.
- 21 May DF EVENT - RSGB Qualifier - Salisbury.
- 28 May EAST SUFFOLK WIRELESS REVIVAL (Ipswich Rally)
- 3/4 June NATIONAL FIELD DAY 1995 - Howletts Hall Farm.
- 6 June CLUB MEETING - Constructors' Competition.

APRIL CLUB MEETING - Report by Harry, G2HPF

We had an interesting talk entitled "A Gallimaufry of Amateur Radio Devices and Experiences" which covered a variety of topics. Geoff was first licenced in 1946 and started with simple home brew equipment when he was at school.

Now he operates a station which makes most of us green with envy. Geoff showed us a slide of his present antenna which is on top of a 75ft telescopic tower. The beam looks like a monobander because you can not see any visible traps; the end of the higher frequency element is terminated with a quarter wave shorted coaxial line which behaves like an open circuit at the high frequency, this line is invisible because it is tucked back within the radiating element; at a lower frequency it looks like a capacitor and this then couples to the rest of the radiating element to be resonant at the next lower frequency band. Credit for the design of this antenna goes to Geoff's brother, EA3BA.

With this antenna, driven by a linear and located up at Danbury no wonder G3EDM works VK stations I cannot even hear on my groundplane. In the past, Geoff said he had obtained very good results using two in-line phased dipoles, separately fed so that the phasing could be changed. Having stated this, with a twinkle in his eye, he did admit that he had two 100ft high buildings conveniently placed to support the ends of this antenna when he was licensed as D2DM while working in Germany!

(continued on Page 2, column 1)

INTERNATIONAL MARCONI DAY - Geoff, G7KLV

At midnight (UTC) last Friday, following months of planning and plotting, a group of us were welcomed by Dr. Geoff Bowles in the Industrial Museum at Sandford Mill to celebrate this annual event, together with some other forty stations around the world.

Unlike NFD the station could be set up in advance. This had taken place the previous week under the direction of our Chief Engineer, Tony G4YTG, so that at 01.00 (local) we were ready to start.

Participation in the event from the original Writtle Hut of 2MT fame had been made possible by the enthusiasm of our two organisers, Charles G0GJS and Pat G0SBQ, together with the willing co-operation of Geoff B. Spot on time the first CQ's went out on two bands from the special event station GB0MWT. In spite of erratic propagation conditions our operators clocked up about 450 contacts world wide.

As this news letter is being put to bed (as they say in the editorial office at Gt. Waltham) and because our organisers are still rather bleary eyed you will have to wait for next month's news letter to read a full and detailed analysis of the event. I am sure all those who operated, helped or visited us enjoyed the event. For me it was a happy fusion of two of my interests, the Museum and the Club. If you missed us on TV last Friday, we will be showing the video of the installation crew at work during the next Club meeting.

For those who would like to see the Writtle Hut and the Museum why not come along to the Open Day on July 16th. The Club is setting up a station there. See the next news letter for details.

Our thanks to all those who took part or supported us; a special thank you to Pippa (no doubt assisted by Harry G5HF) for feeding us so well and to our host Geoff Bowles (see him, hear him at the July Club meeting) for making us all so welcome.

COMMITTEE MEETING

The next Committee meeting will be held at 7.30pm on Wednesday 10th May, in Telford Lodge, you are welcome to join us.

Last months meeting - continued from page 1.

Now we had a digression covering decibels. With the assistance of Roy a 800Hz tone was produced (No, I do not mean that Roy made the noise, but he operated the equipment) and Geoff changed the level by one dB, barely discernable, and challenged anyone to go out of the room and come back in again and say which of the two levels it was set at; there were no takers! The level of 3dB is noticeable, 6dB twice as much, but bear in mind this is the only improvement you will get when you add a 400 Watt amplifier to your 100W rig.

While producing sounds we then heard the various noises produced by CW, high speed CW, RTTY, SITOR, PACKET, AMTOR and GTOR. Geoff commented that GTOR was used by the Voyager spacecraft to send back the colour images from Jupiter and Saturn to earth.

Another topic mentioned was the wetting of relay contacts. If you insert a capacitor in the signal path each side of the relay contact, and apply a DC voltage via two high value resistors for a current of about 1mA through the contacts when they are closed, more reliable operation is obtained, especially when you are talking about signals of a microvolt which you would have in the case of antenna change-over relays.

Having relatives in VK, Geoff often avoids the cold English winters by going down under. There was an interesting Video of the Perth area, including one of him operating from the station of VK6GE, Fred Madison, who himself used to live in the Galleywood area here.

On his last visit, Geoff thought he would like to holiday in the Northern Territory; his wife Sylvia agreed to sample the "experience!". This entailed a flight up to Alice Springs where they started on a caravan trip; not one of your 4 berth caravans but a 20 seater, with food, wood for cooking, tents, fuel and most important of all, water. To keep fit in that very hot climate everybody has to drink at least 3 litres of water per day. A grim reminder of this was a slide of a gravestone right out in the wilds, with the epitaph "Died of Thirst".

If you break down you need a handyman who can repair anything and its also essential to have someone who is skilled in first aid. The route took them to Broome with its 80 mile beach, Wyndham, Katherine, the Ord River and Darwin. Bathing is when you find a convenient water hole or river, but the advice, "beware of the crocodiles".

Thank you Geoff for a very interesting talk.

DF NEWS - Dick, G3WHR The First Chelmsford Event.

The opening of the season took place on 21st April with Roy Emeny as the hidden station. The start bearing took us towards Mersey Island, where we soon became lost in the maze of small streets typical of a residential area. With so many cul-de-sacs to investigate, it became easier to leave my car and start running through the streets. Fortunately I didn't have to go too far before I came across an Industrial site which was by now surrounded by DF cars.

Too much National DF has conditioned me to go leaping into the thickest or thorny cover to locate the transmitter. This was not the best tactic to employ on this occasion; Roy had erected a dummy aerial over the thick stuff and positioned himself behind an abandoned container from where he could watch the proceedings. When I had calmed down to the point where I began to use my set to take bearings I soon realised that the signal was coming from an isolated corner of the site and there I found Roy. Although the results do not reflect this, the best effort of the evening came from Peter Graves, who drove up to the site, got out of his car and taking only one bearing, walked straight to the transmitter . . . a lesson to us all.

Results:-

1. Peter Larbalestier	8.22	4. Andrew Mead	8.45
2. Tim Parker	8.34	5. Dick Brocks	8.48
3. Phillip Cunningham	8.39	6. Peter Graves	9.00

Future events:-

12th May, Colchester
21st May, RSGB Salisbury
26th May, Chelmsford

MINIATURE CIRCUIT BREAKERS - Geoff, G7KLV

Have you ever thought of replacing fuses in your domestic installation with miniature circuit breakers? Yes, they are much more expensive but well worth the extra expense, for instance, on the ring main or as a means of protecting and isolating the power supply to the shack. Over the years I have replaced all my fuses with MCB's.

MCB's come in a number of different types rather like quick blow and slow blow fuses. It is essential to select the most suitable type for the job in hand. Fuses are cheap and it doesn't cost much to fit a more suitable type if the original choice was wrong. Not so with MCB's.

The units for domestic use actually contain two trips.

One is a bi-metal device and the other is an electro-magnetic device which operates on instantaneous overloads. It is the latter that requires careful selection.

Three types are available known as Types 1, 2 and 3. They trip on instantaneous overloads of 3.5-5, 4-7 or 6-9 times the rated current. The type number is usually printed on the device.

It is the latter choice that can cause problems. Switching on inductive loads can cause a heavier than normal current to flow for a short time. Depending on the design of the transformer the switching on current can be up to about ten times the normal FLC current. For example, suppose that a device which uses a transformer takes a normal full load current of, say, four amps is protected by a circuit fitted with a 5 amp MCB. It would probably be found that a Type 1 device would trip on switching on due to the instantaneous switching on current exceeding the 3.5 - 5 amp limit. In this case it is probable that satisfactory performance would only be obtained with a Type 3 tripping characteristic. Resistance loads like fires and cookers are satisfactory with Type 1 devices. Although filament lamps and fluorescent fittings take a high instantaneous starting current the normal full load current is relatively small compared with the MCB rated current. If a number of fluorescents were switched on simultaneously more care would be required in selecting a suitable type of device. If, after fitting an MCB in to a circuit it trips do not fit a higher rated trip as it may well be the instantaneous tripping characteristic that is causing the problem.

NATIONAL FIELD DAY 1995

The following is an extract from the minutes of the last committee meeting, for information to our prospective helpers. Ed.

Charles briefed the Committee on the NFD meeting which took place at his QTH on 10/04/95. Ten members were present. Principle points were:-

(i) There will be four operators and an adequate backing of loggers. Schedules were agreed and will be issued by Gwyn G4FKH.

(ii) A second receiver is allowed this year and will be supplied by Colin, G4IUK.

(iii) All logging will take place using Super-Duper and operators and loggers are practising the necessary skills and techniques.

(iv) The required equipment schedule was listed in detail by Dick during which concern was expressed that the Club rotator and Yagi array has still to be recovered from the home of silent key G4CUT (Roy will contact Mrs. Turner). The antenna this year will be an inverted Vee with a 300 ohm feeder and with ends pointing East-West.

(v) The site is again Howletts Farm and Charles will write to the farmer as a follow up to Brian's regular telephone call.

(vi) The Committee gave permission for Andrew to spend funds for provisions for the "NAAFI" Tent.

More information in the next News Letter. Ed.

TIMELY REMINDER

Only 5 weeks to the constructors' competition on 6th June; time to tidy up the loose ends!!!

73 from Roy & Ela Martyr,
G3PMX & G6HKM

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